

Figure 1A

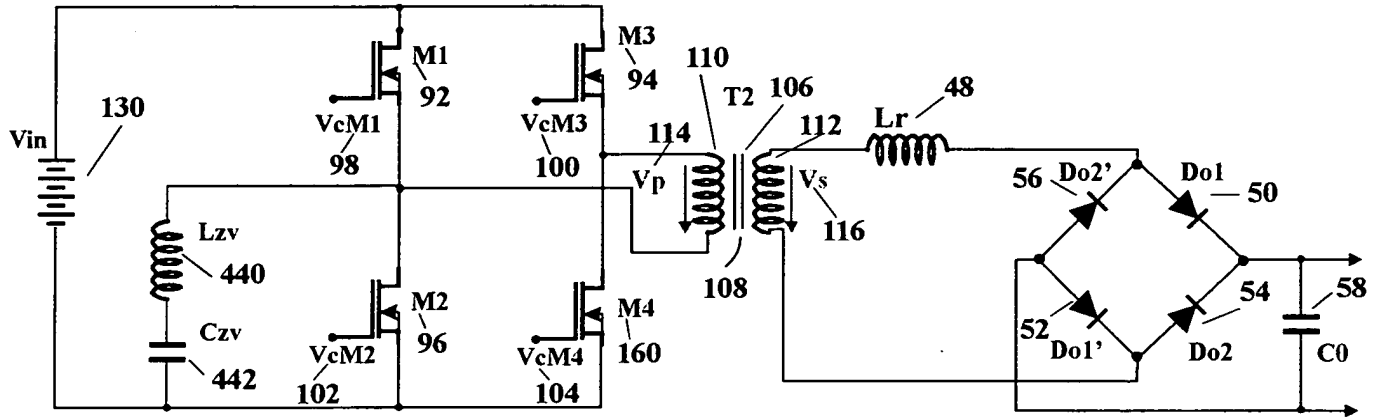
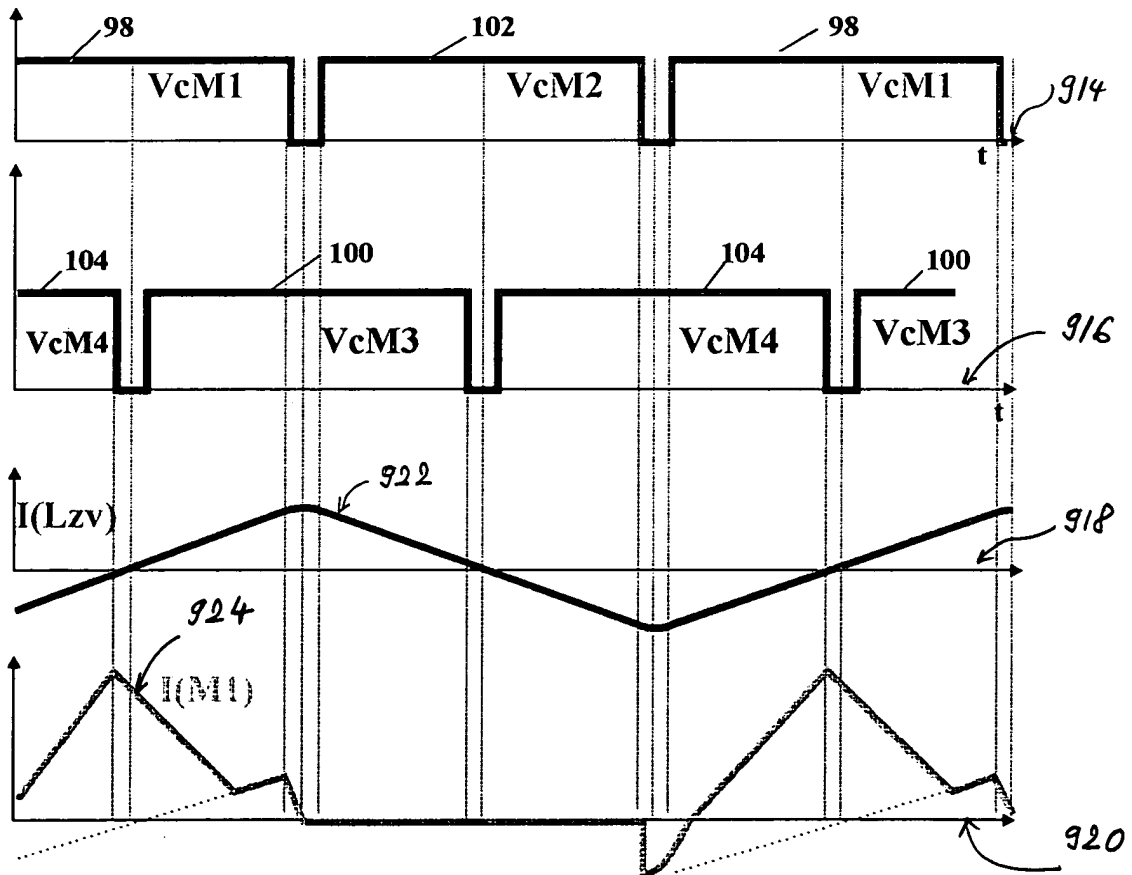


Figure 1B



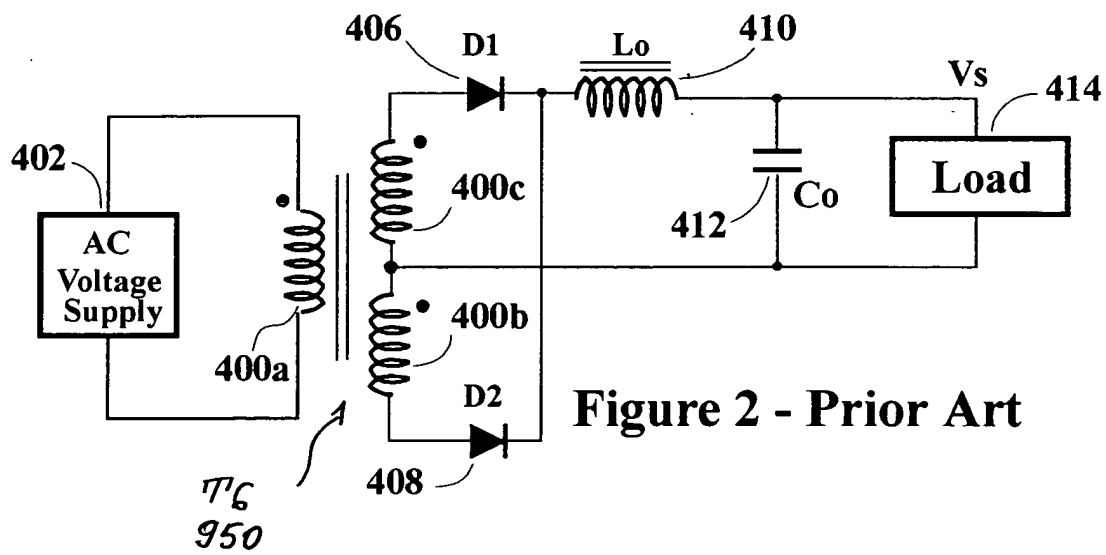


Figure 2 - Prior Art

607060-02409263

Figure 3A - Prior Art

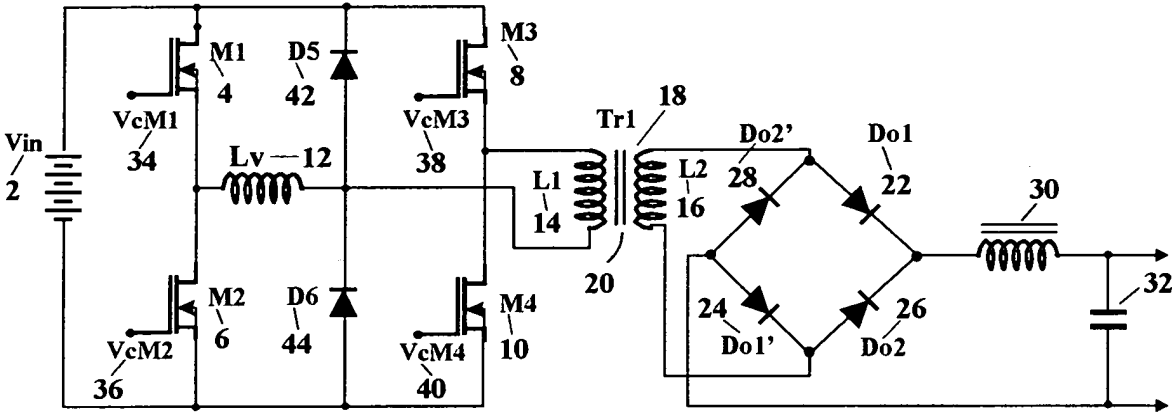


Figure 3B - Prior Art

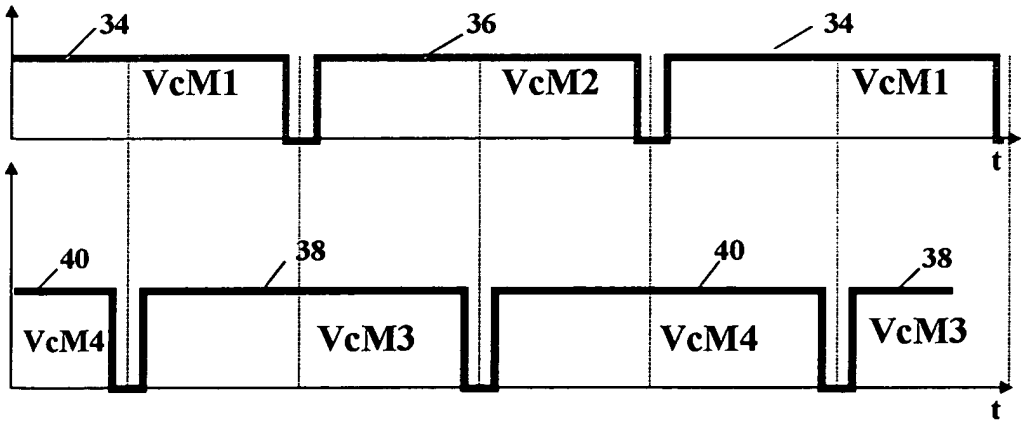


Figure 4A

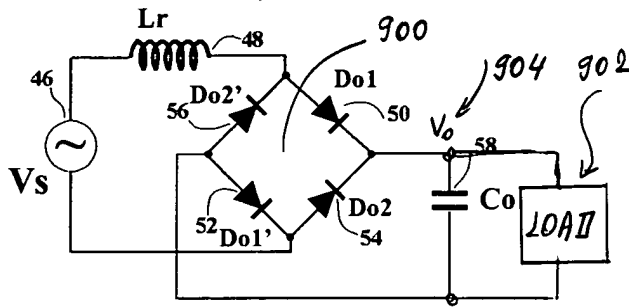
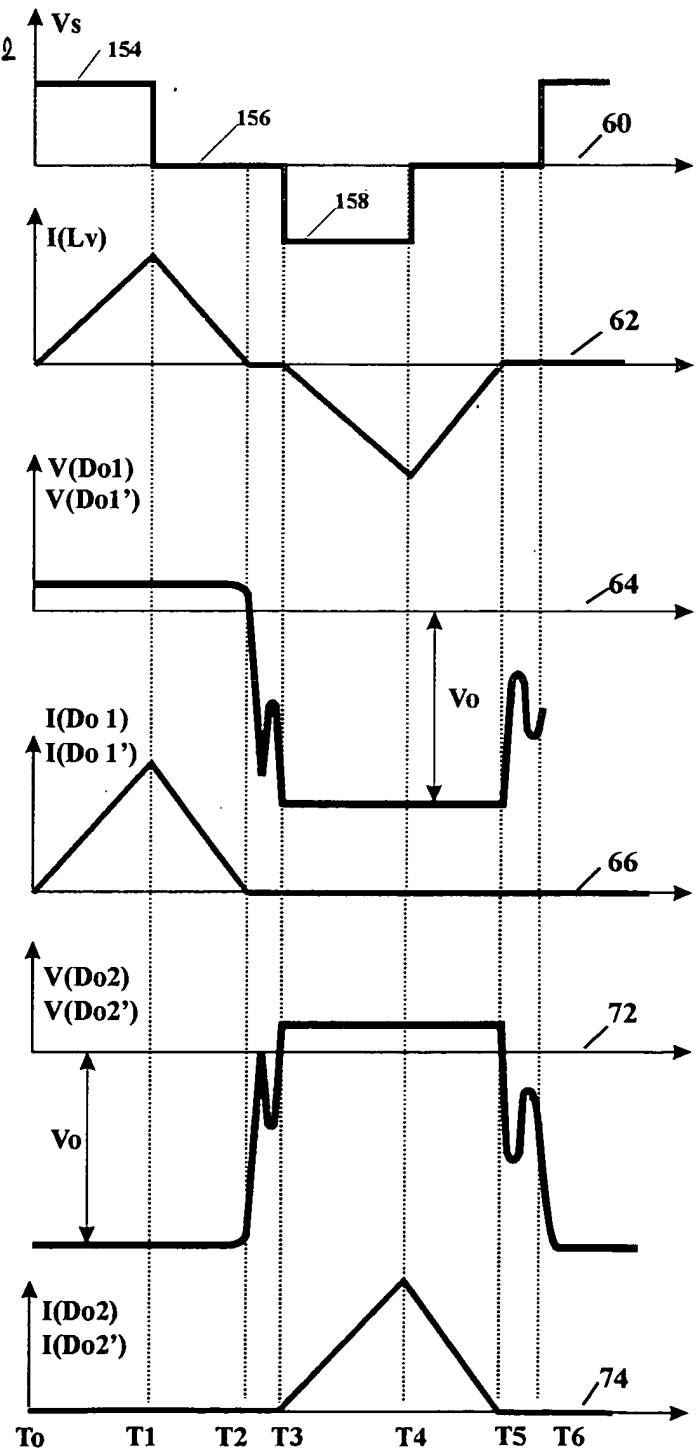


Figure 4B



6340003 " 64400000

Figure 5A

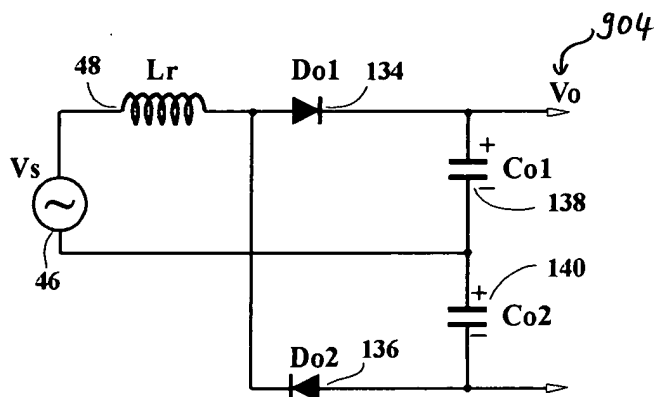


Figure 5B

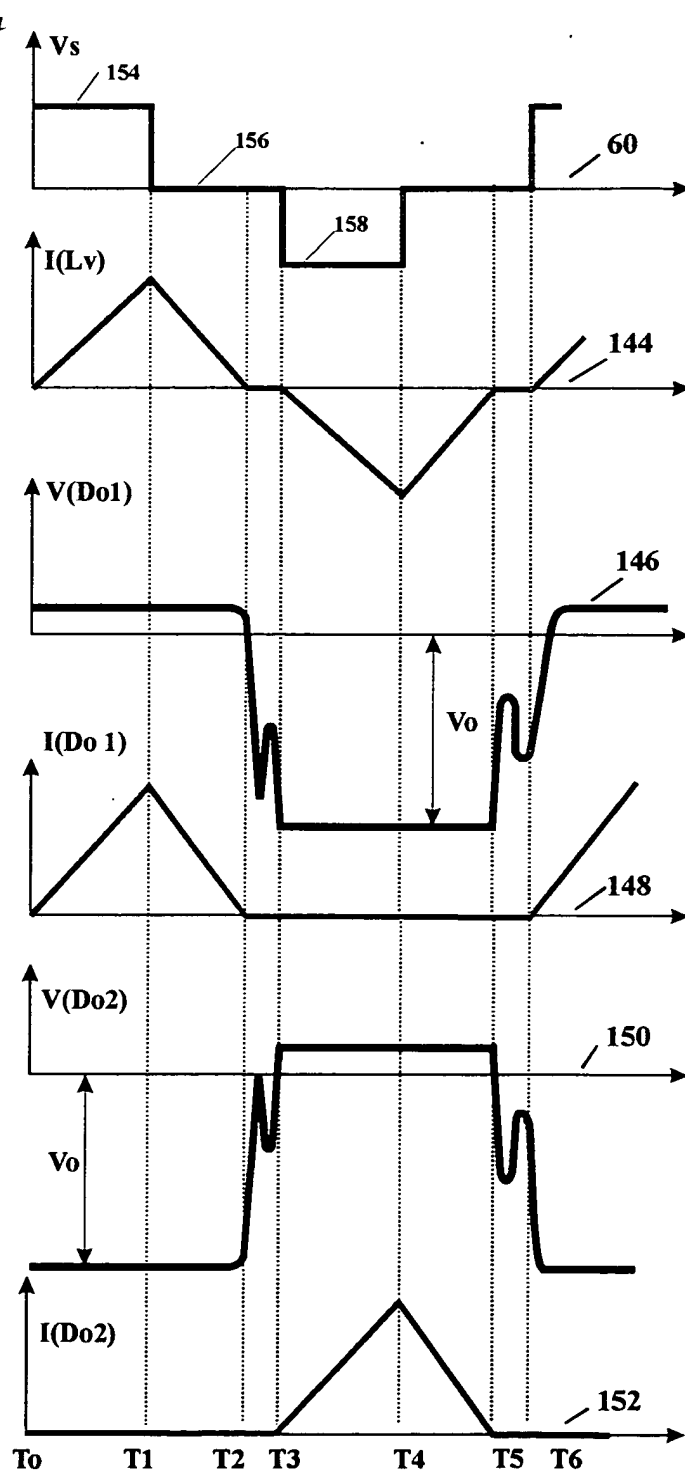


Figure 6A

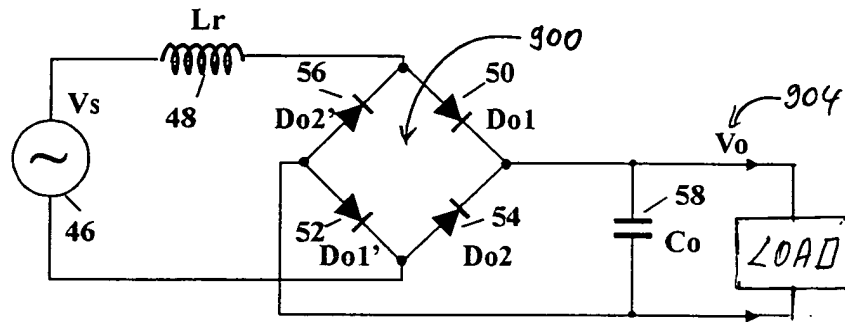


Figure 6B

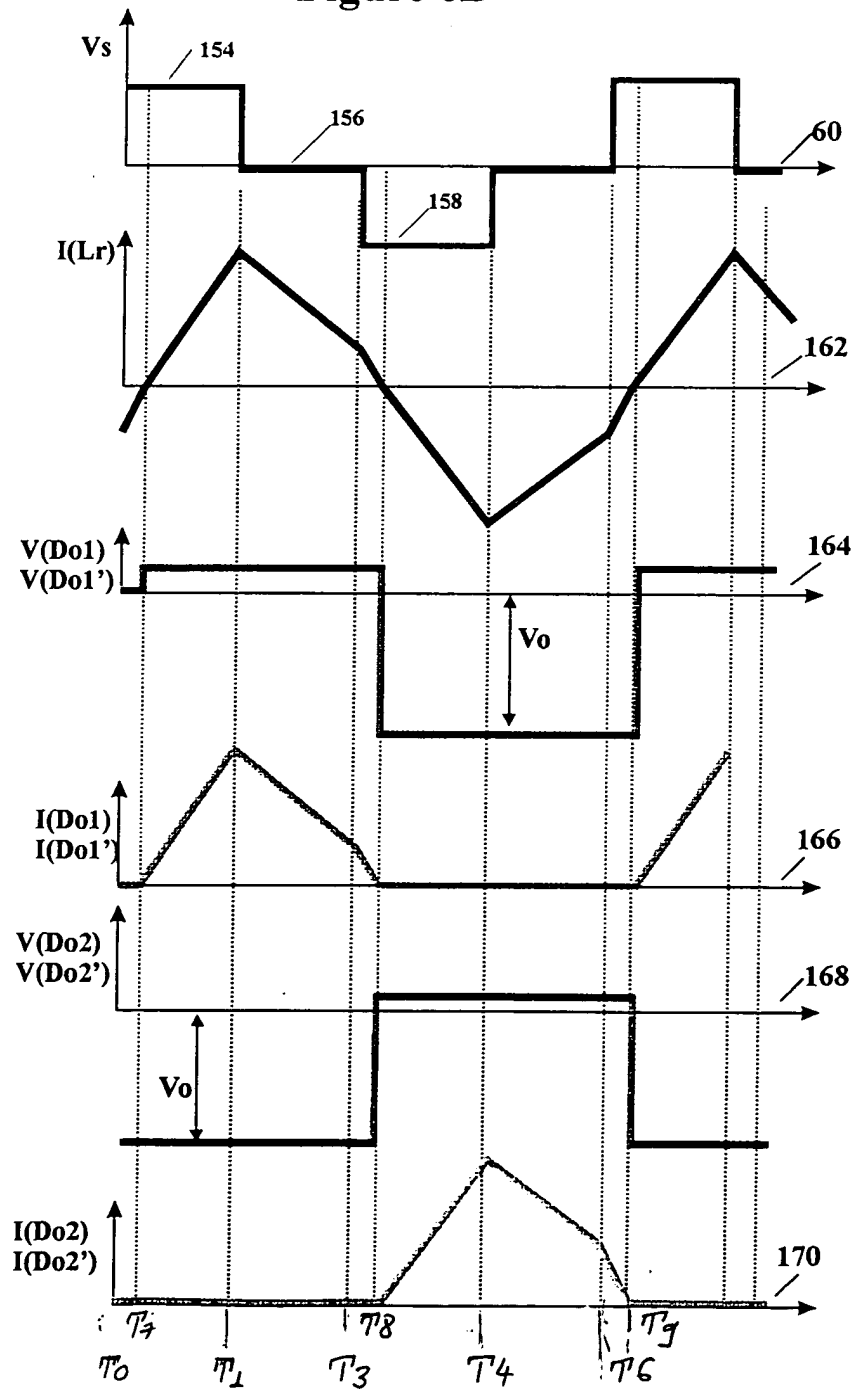


Figure 7A

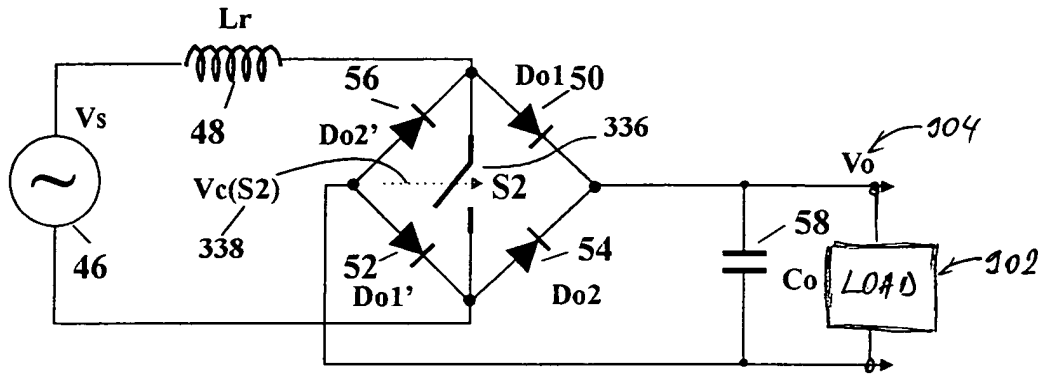


Figure 7B

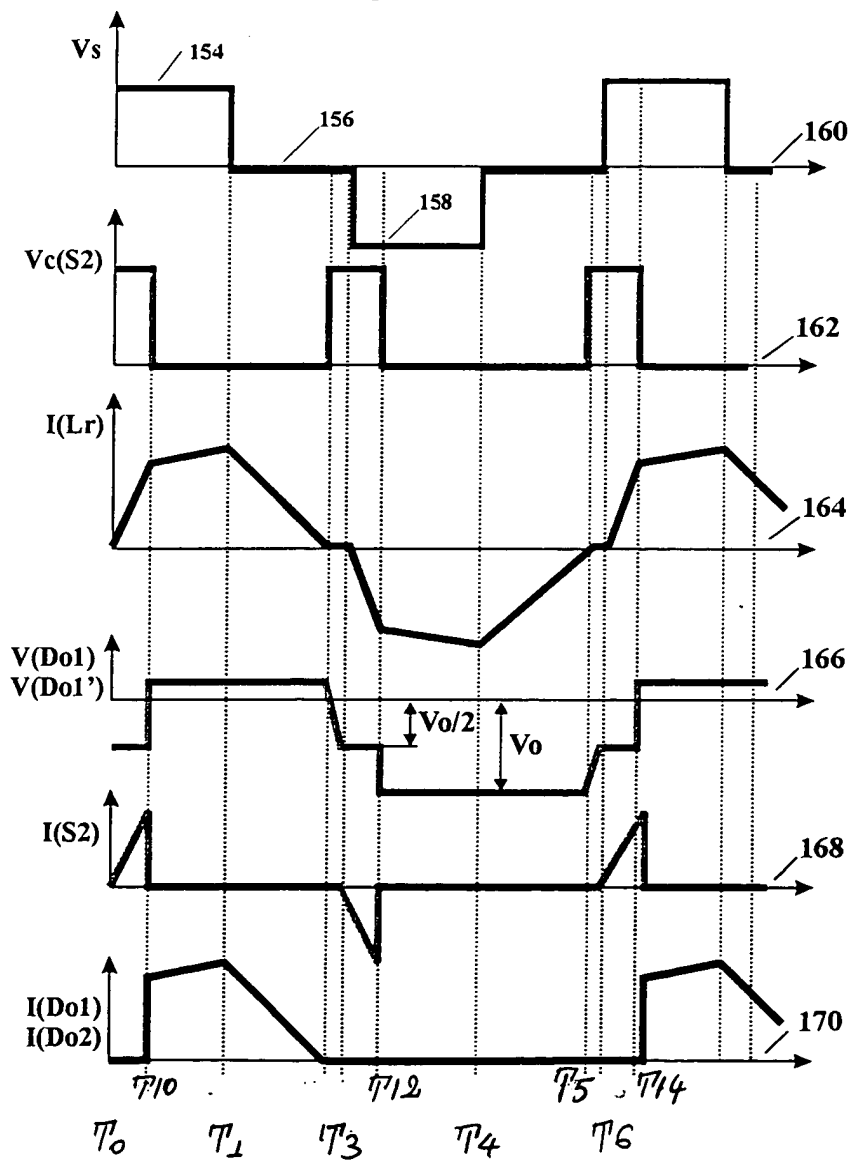


Figure 8A

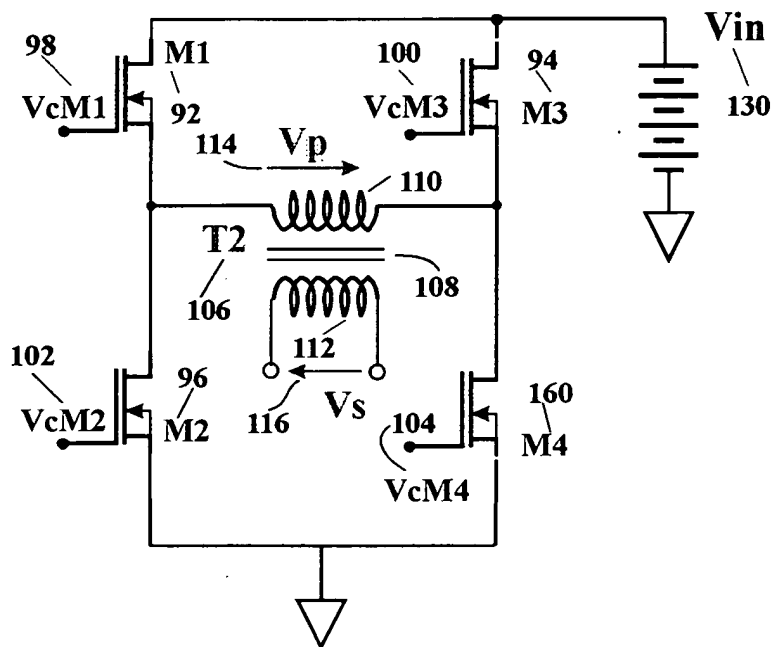


Figure 8B

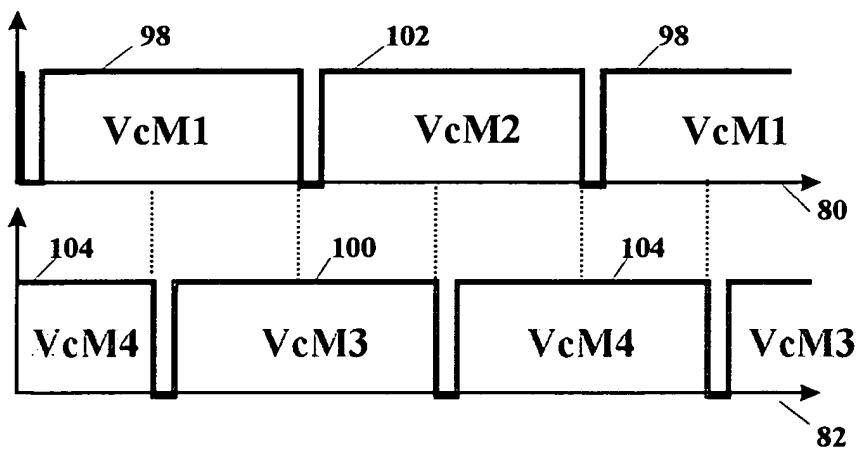


Figure 9A

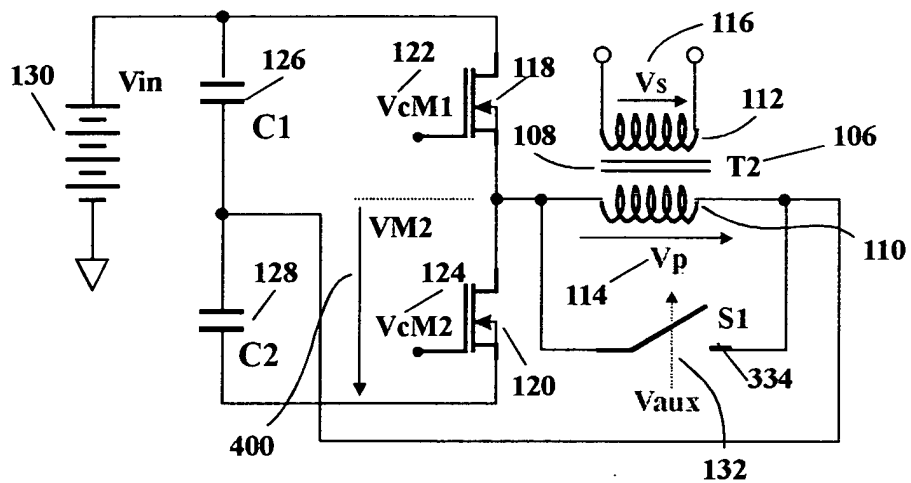
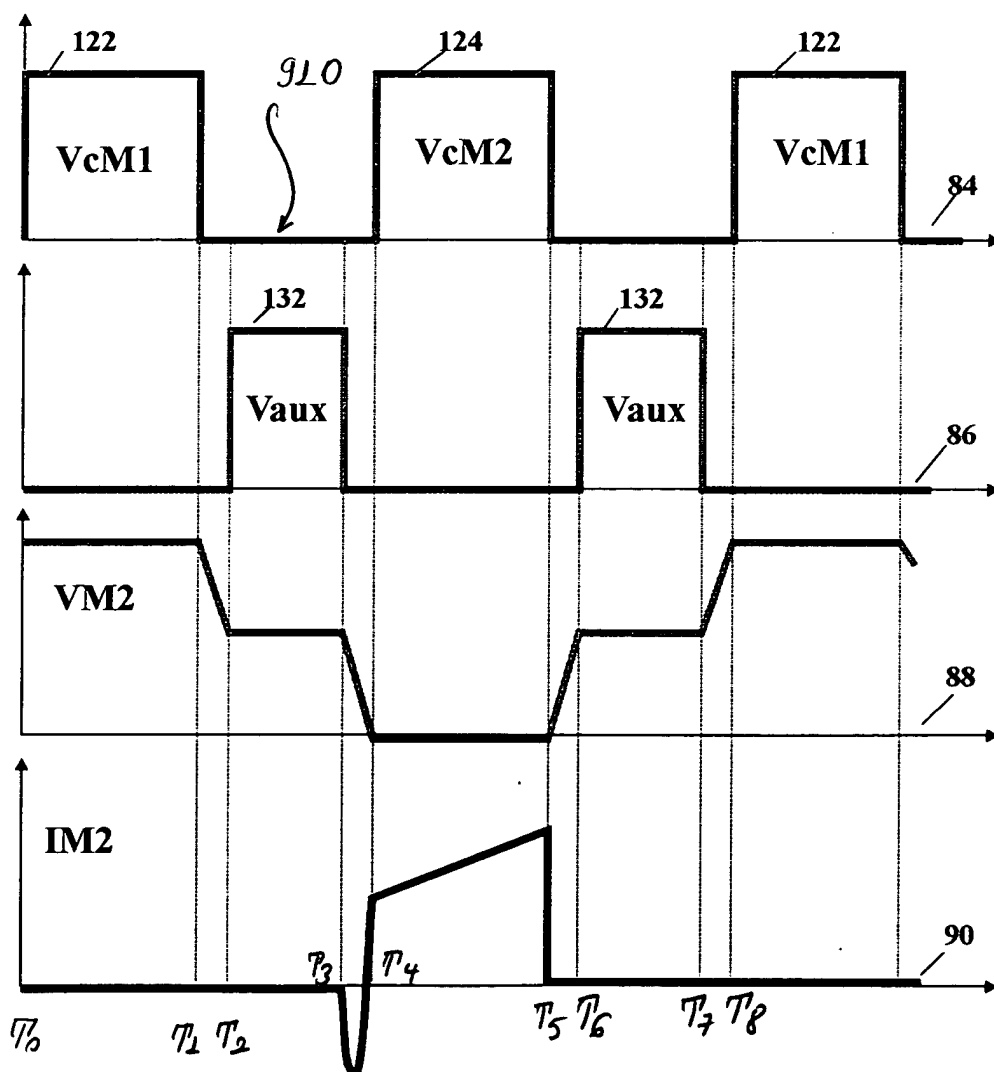


Figure 9B



[illegible]

The timing diagram illustrates the voltage and current waveforms for a power electronic circuit over seven time intervals: T_0 , T_1 , T_2 , T_3 , T_4 , T_5 , and T_6 .

- V_s (154):** The source voltage is a step function. It is at a high level from T_0 to T_1 , drops to a lower level at T_1 , and returns to the high level at T_5 .
- V_{c1} (158):** The voltage across capacitor C_1 is zero from T_0 to T_2 , then steps up to a constant positive value until T_3 , and returns to zero at T_3 .
- V_{c2} (702):** The voltage across capacitor C_2 is zero from T_0 to T_2 , then steps up to a constant positive value until T_5 , and returns to zero at T_5 .
- $I(L_v)$ (62):** The load current is a triangular waveform. It ramps up from zero at T_0 to a peak at T_1 , ramps down to zero at T_2 , remains at zero until T_3 , ramps down to a negative peak at T_4 , ramps up to zero at T_5 , and remains at zero until T_6 .

Reference numerals 156 and 60 point to the low and high levels of the V_s waveform, respectively. Reference numeral 700 points to the zero level of the V_{c1} waveform.

[illegible]

The timing diagram illustrates the voltage and current waveforms for a power electronic circuit over a sequence of time intervals: T_0 , T_1 , T_2 , T_3 , T_4 , T_5 , and T_6 .

- V_s (154):** The source voltage is a step function. It is at a high level from T_0 to T_1 , drops to a lower level at T_1 , and returns to the high level at T_5 . The label 154 points to the high level, 156 points to the low level, and 60 points to the rising edge at T_5 .
- V_{c1} (704):** The capacitor voltage V_{c1} is high from T_0 to T_2 and then drops to zero at T_2 . The label 704 points to the high level.
- V_{c2} (706):** The capacitor voltage V_{c2} is zero until T_3 , where it steps up to a constant high level, which it maintains until T_5 . The label 706 points to this high level.
- $I(L_v)$ (62):** The inductor current $I(L_v)$ starts at zero at T_0 , rises linearly to a peak at T_1 , and falls linearly to zero at T_2 . It remains at zero until T_3 , then falls linearly to a negative peak at T_4 , and rises linearly back to zero at T_5 , where it remains until T_6 . The label 62 points to the zero-current segment between T_5 and T_6 .

6540000 3449960

Figure 12A

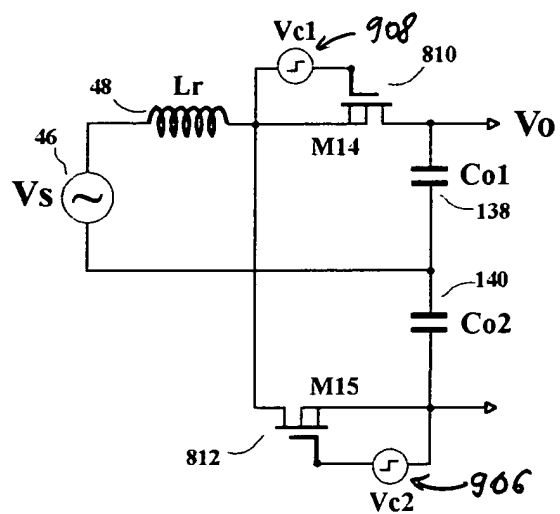
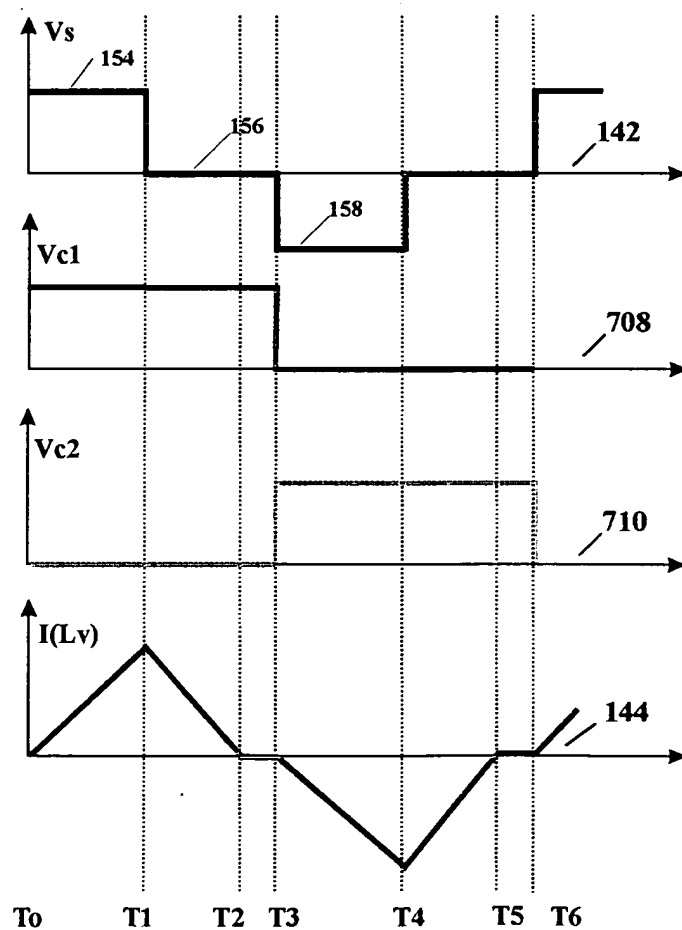


Figure 12B



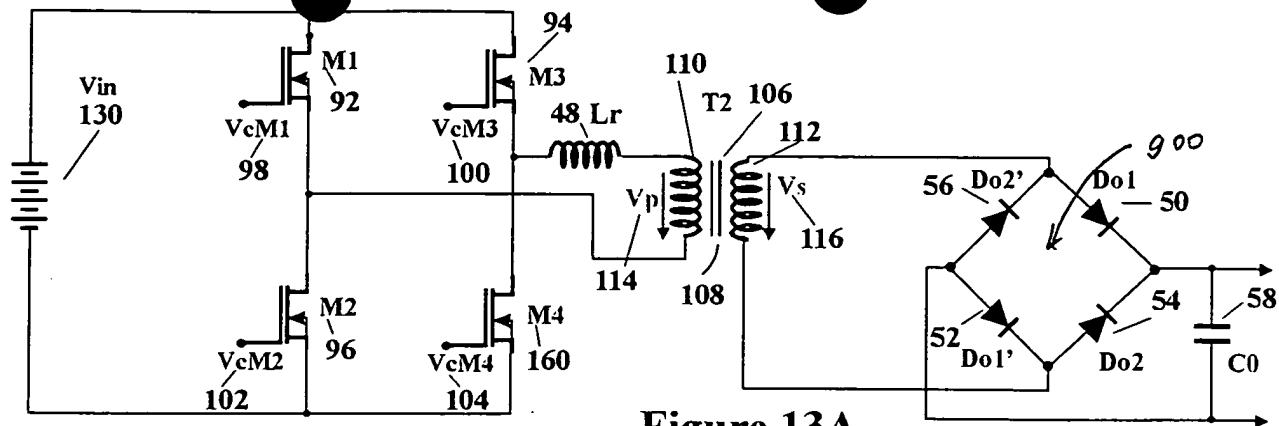


Figure 13A

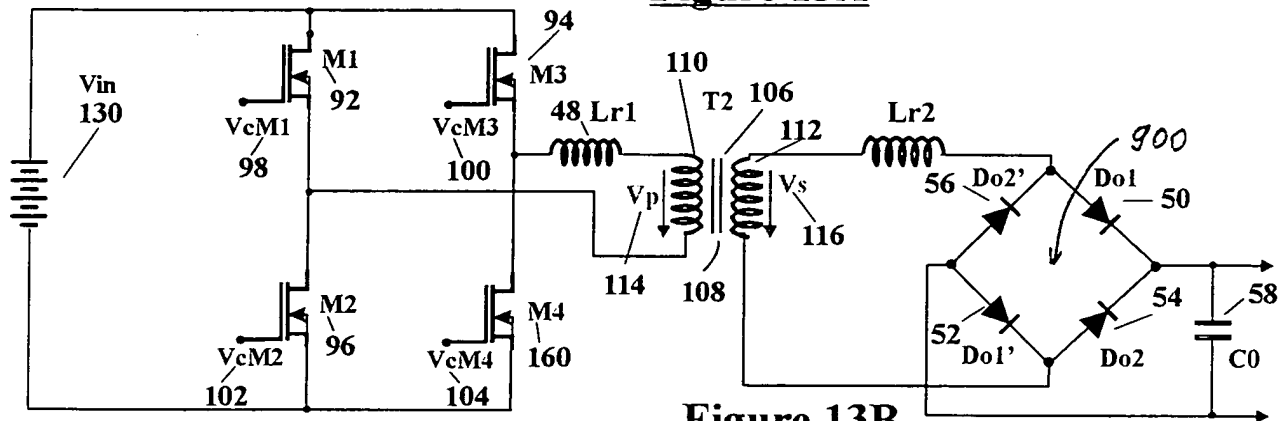


Figure 13B

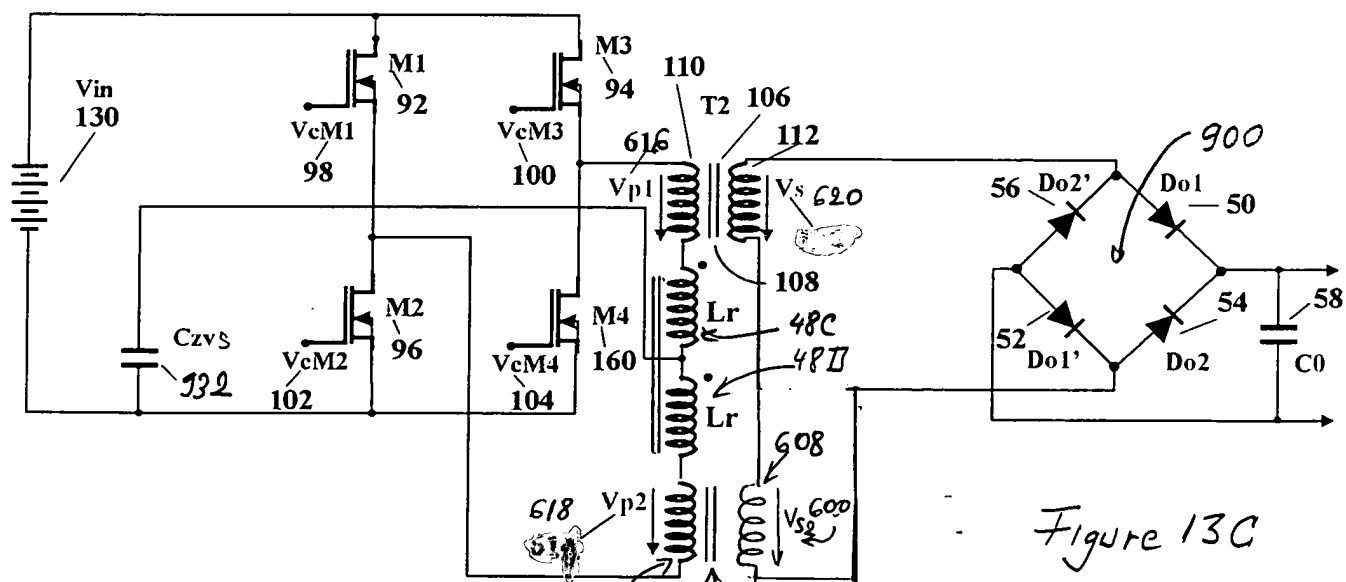


Figure 13C

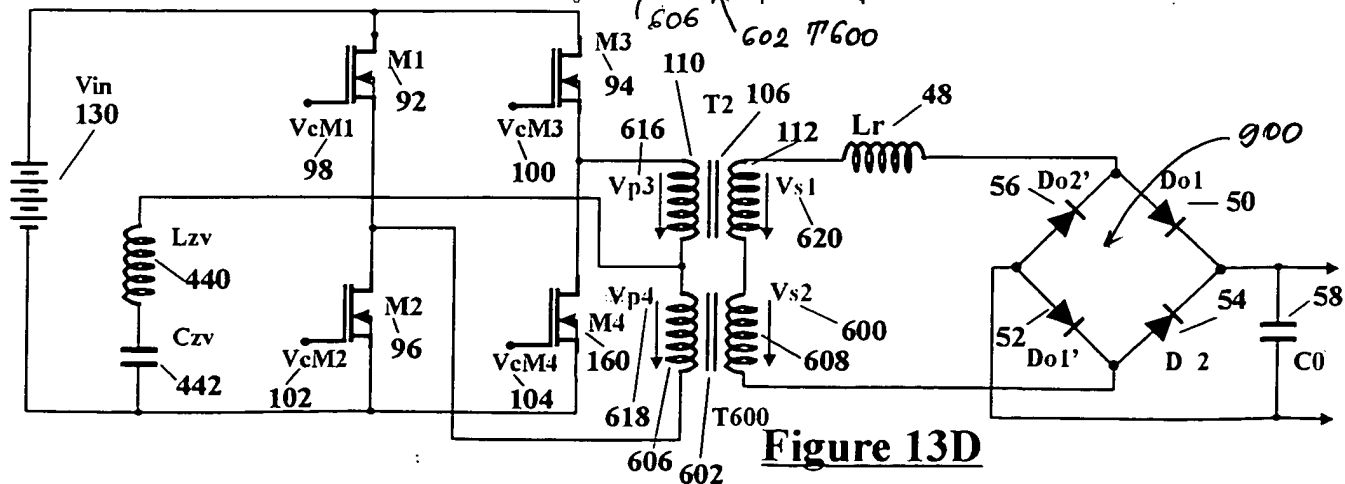


Figure 13D

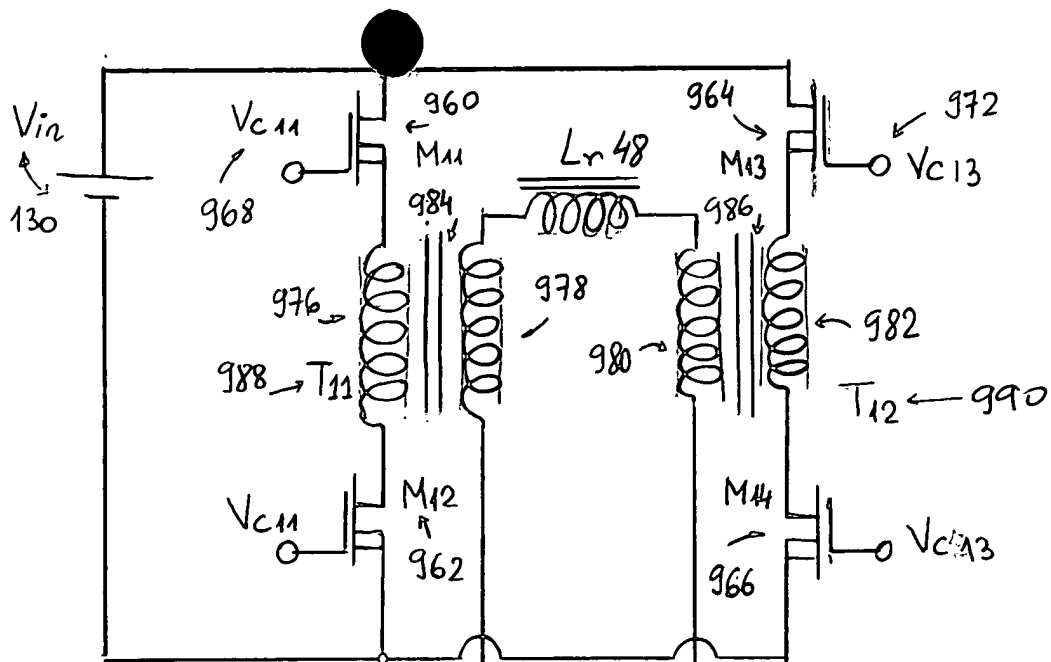


Fig. 14A

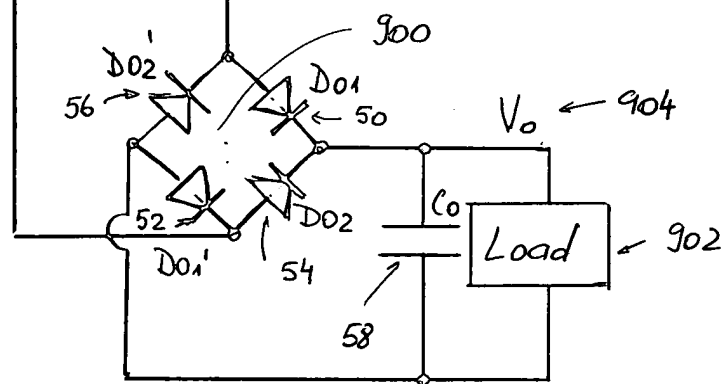


Fig. 14B

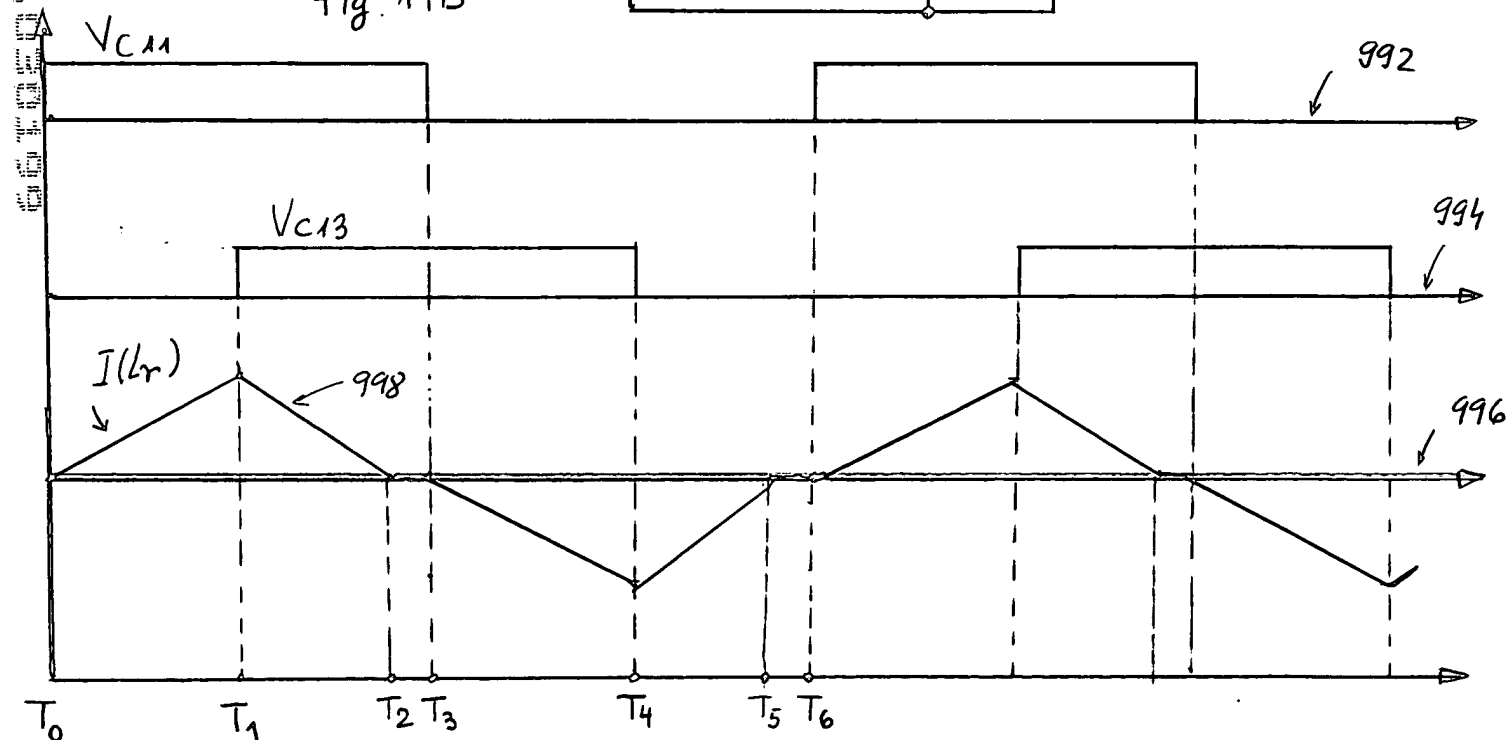


Figure 15

